2004-02-09 WSDM TC Face to Face Meeting Minutes

Agenda

- 9am Welcome/Attendance/TC Administrivia (Action Item tracking, WSDM 1.0 Spec line-items List, Editor coordination)
- 9:30 - 10:00 Interoperability Scenario Review
- 10:00-12:30 - WS Resource Framework
    - Stateful services and the Implied Resource Model - Tom Maguire, William Vambenepe
    - Specification review - WS-Addressing, WS-Notification, WS-Resource Properties - Tom Maguire, William Vambenepe
    - Q and A - Tom Maguire, William Vambenepe
    - Discussion on relevance to WSDM Specifications - All
    - Vote on how to leverage in WSDM Specifications - All
    - WSDM Platform resolutions - outstanding issues, path for resolution
- 12:30 - 1:00 - Lunch
- 1:00-6:00 MUWS Review and Agreement of Documents
- 1:00 Architecture
- 1:30 Platform
- 2:00 Identity
- 3:00 State
- 7:00 Group Dinner

Action Items

Assigned To	Date Due	Action Item	AI ID
Warren	9 February	Upload the Metrics Framework	20040209-A
Andreas D.	Soon	Write an Introduction to the MUWS Specification	20040209-B
?	Soon	Write Section 4, Platform	20040209-C
Igor	Soon	Send the text on composability of manageability to William	20040209-D
Heather	Soon	Provide text to William to accompany the figure on WS Architecture	20040209-E
Igor and William	Soon	Resolve the issue of using URNs or URLs	20040209-F
Igor	Soon	Update the Logical Model UML to remove the resource box and associated items	20040209-G

Assigned To	Date Due	Action Item	AI ID
Andreas and William	Soon	Update Role Diagram to shade the Role boxes differently from the non-Role boxes	20040209-H
Igor	Soon	Update the Processing Model and Interaction Patterns as discussed and provide to William and Andreas	20040209-I
William	Soon	Add statement that MUWS Identity capability is required	20040209-J
Andreas and William	Soon	Update MUWS document as discussed, incorporating inputs and making editorial changes discussed.	20040209-K
Igor, Ellen, Karl	Soon	Update Resource State document with UML and XML as discussed.	20040209-L

Motions

- Formal Motion to use WS-Addressing for the addressing mechanism in WSDM. 17 in favor. None opposed. Passed.
- Formal Motion to use WS-Resource Properties. 10 in favor. None opposed. 7 abstained pending further information.

Summary

- D

Meeting Notes

- 9am Welcome/Attendance/TC Administrivia (Action Item tracking, WSDM 1.0 Spec line-items List, Editor coordination)
  - Welcome from Heather. Thanks to Jim Willits and HP for hosting us.
    - New faces in the room. Will hold off on roll call for connectivity. Passing around a sign up sheet.
    - Went around the room and introduced ourselves.
  - Want to have the 0.5 Specifications ready by end of March. Need to focus on that, shelve certain issues until later.
    - Need the architecture, the platform, Identity, Metrics, State, WSDL Mapping.
    - Work items for 0.5 MUWS and MOWS Specifications.
  - Action Item Tracking.
    - Be a bit more process oriented.
    - Use the online Action Item tracking capability.
    - If you don't vote on ballots, it counts against you for membership.

- Straw man on metrics. Warren will upload the framework, so we can use it tomorrow.
- WSDM 1.0 Specification line-items list.
- 9:30 - 10:00 Interop Scenario Review by Igor.
  - Diagram.
    - Dotted line is Internet.
    - Two scenarios. One is in-band, same endpoint for manageability as for business. Second has to endpoints, one for manageability, one for business.
    - Managers should be given the WSDL. Don't think discovery is important for 0.5. Like being given a URL for the WSDL.
  - Discovery.
    - Focused on "given the WSDL, how is manageability discovered"
    - If it is in-band, give me one with both in it.
    - If it is out-of-band, give me one WSDL document that has both services.
    - Igor thinks that being given two WSDLs is too much for 0.5.
    - If you get a WSDL that only covers manageability, then you have to discover the resource being managed at run time, using Identity.
    - Discussion about whether you should need to use Identity if it is in-band. Can you avoid it when implementing the resource and manageability. Interface needs should be consistent.
  - Interoperability Demo.
    - Discussion of whether we need both scenarios for Interoperability Test. Heather pointed out that Managers will not be interested in the functional side of the Web Service. A Manager doesn't have to know about it, will discard it.
    - Clients in demo need to use the functional interface.
    - Managers don't need to use it. May not care how it works.
    - Can we demonstrate it visually, or talk about it – what is the value added? Don't we have to have a value add, to justify doing it?
    - Discussion tabled on whether MOWS Identity is an instance of MUWS Identity, or they are both there, or one is an extension of the other.
    - List the Business Use Cases we are interested in demonstrating.
    - Disagreement on whether Identity should be optional for the in-band cases. If the Manager gets WSDL with non-WSDM capabilities – can you safely assume that those are functional capabilities of the manageable resource? Examples of BEA application servers that don't have access to their own URL. Fred proposed that we allow a special value of "Self" for that case.
- 10:00-12:30 - WS Resource Framework - 6 Specifications and a White Paper. Now up to 9 Specifications. Modeling State with WS. Etc. Tom Maguire, William Vambenepe
  - Context (Note, this PowerPoint was uploaded to the WSDM web site.)
    - OGSA. Defining a Service-Oriented Architecture. Effective virtualization, etc.
    - Build on Web Services standards, extending them where needed.
    - Trying to converge Grid (GT1, GT2, OGSI) and Web (HTTP, WSDL, WS-*, WSDL 2, WSDM) into WSRF.
    - Too much in one specification (like OGSI 1.0), especially extra non-normative parts. So partitioned it into set of specs that can be mixed and matched.
    - Didn't work well with existing Web Services tooling. Extending XSDElement. WSRF tones down the use of XML Schema – more in line with what is in use

today.
- Too object oriented (?). separated interface "service" from stateful "resources". Removed strict encapsulation requirement.
- WS-Resource Framework.
  - Family of specification proposals.
    - Design pattern to access "stateful" components.
    - Message based publish-subscribe to Web Services (WS-Notification). How you put a broker in the model.
    - WS-Notification, WS-Resource Properties, WS- Resource Lifetime – main 3. three others being developed.
  - What is it.
    - WS-Notification. Publish / Subscribe.
    - WS-Resource framework – clarify how "state" and Web Services combine.
  - Relation to OGSA – see diagram.
    - Note that OGSI now not totally on top of Web Services, now just called Web Services.
    - Now OGSA can be defined and implemented as Web Services.
    - OGSA can take advantage of other Web Services standards, like WS-Security.
    - Use standard WS development tools.
- What is a Web Service?
- WS-Addressing.
  - Standardizes representation of the address of a Web Service.
  - WS-Addressing EPR is XML serialization of a network-wide pointer to a Web Service.
  - EPRs can be used to pass services to other services by reference.
  - Didn't extend WS-Addressing, it was meant to do this.
- WS-Resource framework model.
  - Examples.
  - Unique. Distinguishable identity and lifetime.
  - Stateful. Maintains a specific state that can be materialized using XML.
  - May be accessed through one or more Web Services.
  - Stateful Resource?
    - State data expressible as XML. Which makes this XML document a first class part.
    - Well-defined identity and lifecycle.
    - Known to, acted upon by one or more Web Services.
    - Identity assigned at creation time.
    - Implied Resource Pattern.
      - Relationship between Web Service and stateful resource.
      - Implicit context.
- WS-Resource
  - stateful resource.
  - wsa:Address component.
  - wsa:ReferenceProperties component contains an XML serialization of the WS-Resource identity. (How does the service know how to dispatch?, does not address how to determine if they are the same thing.)
  - context is opaque to the service requester.

- Service requester's applications should not examine or attempt to interpret the contents of the context.
- Service requester POV:
  - pointer to the WS that has been further constrained to execute its message exchanges within the context of a specific WS-Resource.
  - Or, the WS-Resource qualified EPR represents the pointer to a WS-Resource accessible through the message exchanges implemented by the associated WS.
- This is not "session state" - it is the "state" of something.
- WS-Resource Factory.
  - WS that can bring a WS-Resource into existence and assign it an identity.
  - Response message must contain WS-Resource EPR.
- WS-Resource Relationship Cardinality.
- WS-Resource and ACID Properties.
  - In the presence of a transactional unit of work, must abide by two-phase commit.
  - Without it, no guarantee.
  - WS-Resource definition is not prescriptive in this area. Could use other standards. WS-Transaction or the like.
- WS-Resource Security
  - similar to above. Use WS-Security to compose security in.
- WS-Resource Properties.
  - Operations and meta data associated with elements of a resource's state.
  - Presented Resource Properties document using XML document.
  - PortType declares association between Web Service and resource properties document.
  - Operations: Get, Get Multiple, Query. Set (by Qname).
    - Mentioned that they are not using XQuery. Waiting for XQuery to come out.
    - Get and Get Multiple? Better Performance using bulk operations, less chattiness, fewer SOAP messages. And Get is simple for simple implementations.
    - Note this all lives in WSDL 1.1. WSDL 2.0 will be out sometime this year, may readdress this.
    - Can understand no dialects.
- WS-Notification.
  - Bring the brokers and intermediaries more clearly into the model.
  - Direct notification: Subscriber, Consumer, Producer. (Generally Subscriber and Consumer will be the same.)
  - Brokered. Subscriber, Broker (decouples Subscriber and Publisher), Publisher (need **not** be a Web Service). Triggered by new Publisher information, then Broker deciding what needs to be done – can "transform" or "interpret" topics. Federated – scalability. [Note, could be decoupled Subscriber and Consumer]
  - Topics are hierarchical, fairly loose.
  - Note that the Subscribe Request follows the Factory pattern, so it has a lifetime. Also has Subscription Policy.
  - Topics and Topic Spaces.
    - Meta data to help. See WSDL.
  - Subscription for Value Change.
    - Rules for mapping resource properties to Topics.

- Subscribe for Life Cycle – like destruction, etc.
  - Note that you need to be able to deal with the notion of time. Ask WS what it thinks the current time is.
- WS-ServiceGroup. (not published yet).
  - WS that maintains information about a group of other WS or WS-Resources.
  - Services may be members of a group for a specific reason.
  - OR may not have any relationship beyond being in the same index or the like.
  - Can have membership constraints – like you have to implement a certain PortType.
  - Use them as registries, various use cases.
- WS-RenewableReferences.
  - Adjunct to WS-Addressing.
  - Needed to move a reference from one place to another without breaking.
  - Multiple, optional ReferenceResolver EPRs. Uses the WS-Policy element of the EPR to hold these.
  - Renewal request includes original EPR as parameter. Don't want to get the same one back. How are they the same? They could be syntactically the same – otherwise waving hands somewhat.
  - Use Case is that the Web Service for a WS-Resource may change.
- WS-BaseFaults.
- Q and A - Tom Maguire, William Vambenepe
  - Load balancing brought up.
- Discussion on relevance to WSDM Specifications – All
  - Renewable References is compared to Correlatable Names, etc.
  - Because we are 0.5, can point to unsubmitted works. This won't be true for 1.0 Specifications. That can use work submitted to standards bodies. 2.0 would use work that is actually standardized.
  - WS Resource Framework group is also looking at having an Interoperability Event in the April time frame. Need to look at the Technical issues as well as the political issues.
  - Richard noted that this work does seem to be related to management, getting state of a resource, etc. Tom noted that WS-Framework is really all about getting access to a stateful thing, which was called a resource.
  - Winston pointed out that it is a lot easier to use work already done in many ways, at least to start.
  - Igor noted that it makes sense technically, and issues can be resolved. But how do you implement it? Can't implement **all of it** by 0.5. Can we determine what we need or can use for 0.5? Also noted that Microsoft .NET is a significant effort. Tom said that WS-Addressing gives you properties. Igor said Notification is more of a worry than Resource Properties.
  - Heather – What do we need from: WS Addressing, WS-Properties, WS-Notifications.
  - Heather – should we even do Notification for 0.5? Igor – if we agree to use WS-Notification and how should we implement it?
  - Paul brought up WS-Eventing. It is definitely shorter. And it is blessed by Microsoft.
  - Paul also asked if we can identify small pieces for 0.5?
  - Winston noted that you could do WS-Notification without a Broker, with

Consumer and Subscriber the same, a few specific Topics, etc.
- Discussion about what goes into 0.5 and why.
  - We have to decide what we are going to do, then we discuss how to do it.
  - If we decide to use subsets or extensions, need to document them and influence the other standards efforts.
  - Homayoun noted that the plan all along was that you could extend your manageability.
- Vote on how to leverage in WSDM Specifications – All
  - Vote on WS-Addressing. IBM and Microsoft support it. Leveraged by GGF.
    - Formal Motion to use WS-Addressing for the addressing mechanism in WSDM. 17 in favor. None opposed. Passed.
  - Properties. WS-Resource Properties – XML, operations documented, etc.
    - Formal Motion to use WS-Resource Properties. 10 in favor. None opposed. 7 abstained.
  - Notification.
    - The group decided that it will take too long to come to agreement in time for a March specification.
- WSDM Platform resolutions - outstanding issues, path for resolution
- 12:30 - 1:00 - Lunch
- 1:00-6:00 MUWS Review and Agreement of Documents
  - 1:00 Architecture. William.
    - AI – write an Intro. Andreas D.
    - Terminology – refer to Glossary.
    - AI – write section 4, Platform.
    - Decision to get rid of section 2, Meta Model.
    - Igor – we need to capture the composability of manageability. AI – Igor will resend the proposed text.
    - AI – Heather will get some text to go with the first Figure on WS Architecture.
    - Discussion of the example URN in the Conceptual Model – need to make sure the example matches what we do. Also, should we use URLs instead of URNs. Action Item to follow up. Igor and William to resolve.
    - AI – Igor. Update the UML to remove the resource box and related arrow from the Logical Model.
    - Discussion of the need to combine the two diagrams or not.
    - AI. William and Andreas. Role diagram needs to identify by color or shading that Consumer, Provider, and Resource are roles, while Service and Capabilities are not.
    - AI. Igor. Processing Model and Interaction Patterns. Update as discussed at December F2F and provide to William and Andreas.
  - 1:30 Platform
  - 2:00 Identity
    - Should we have ResourceType as another property in Identity? A ResourceType may implement a set of operations, etc. If ResourceType is constrained to a limited set, it could pose problems. Also, is it part of a hierarchy? Is it a class? How many ResourceType values should be allowed, N? Winston noted that we have been burned by identifying what type something is – is it a Word Processor or a Spreadsheet? Is it a storage device, a logical drive, a disk drive, a SCSI disk drive, etc.?

- William asked whether you need it machine usable. After all, you can put in the human useful data in the name. Heather said you might want to find all resources of a certain type.
- Michael said the traditional way is to look at interfaces exposed, and a hierarchical arrangement of them, so you can go up or down.
- Igor suggested tabling until WSDL 2.0, which has mechanisms for multiple inheritance.
- Tom – you don't want to use portType to disambiguate. Heather noted that different devices may have the same operations and metrics.
- Igor – the manager has to look at the capabilities more than anything else.
- Winston – how would we come up with that list?
- William – manager only cares about what it can do to manage it. Maybe a helicopter and airplane are managed the same way. Manager doesn't care.
- Homayoun's example is that you don't use Start without knowing the functional aspect (what if it is a nuclear bomb?).
- Karl noted that in DMTF, if someone adds new capabilities, have a responsibility to provide enough semantics to make the capabilities useful.
- Andrea noted that current work in profiles leads to not having an enumerated list in one location.
- Andrea. CIM. File system as an example. Does the management system need to create and delete files? Yes. And does the manager report on status, etc.?
- Karl. You need a taxonomy of management capabilities and functional aspects being managed. Completely orthogonal.
- Michael. Do you need to find them via their functional interface or their management interface?
- Tom. The use case was where you have the same manageability capabilities, but different constraints on them.
- MUWS Identity vs a domain-specific item. How do we reference domain-specific capabilities that may be available?
  - Igor. MOWS Identification is simply a separate capability in the Web Services domain. Identification tells you what the resource is being managed.
  - Is Identity required? Yes, the set is required, but only resourceId is required in the set.
  - Igor gives example of Web Service developer who only wants to provide Up or Down to management. What guidance do they have for Identity?
  - Fred. Two reasons to have Identity. One, protocol symmetry - can always ask who you are. Two, not necessarily convinced yet that MOWS Identification is going to be exactly the endpoint, there might be more there.
  - Igor mentioned that the client of the service wants to use manageability capabilities as well as the functional.
  - Discussion of having containers (WSEE) provide Identity for WS.
  - AI – add statement that Identity is required.
  - Heather asked if we should use this as a marker that is it WSDM manageable. Decided to tell it.
- Details.
  - Heather – do we need a GetIdentity? Particularly, are we using WS-Resource Properties to do it? Because for every RP, there is Get, GetMultiple, Query,

Set. So, do we define Identity as a Resource Property? Or just the three beneath it: resourceId, name, version. (Discussion about "give me all your metrics" as well.)
- Need defined serializations for these.
- Decided that there is no need for GetIdentity, would define the resourceID, name, and version as separate Resource Properties.
- Fred noted that using these things make the WSDL 90-100% done. Heather said we might add additional WSDL operations, etc. William agreed also and said the most work is in the data.
- Heather – what about finding out all the metrics? William – can make it an xsi property. The discussed whether XPath needs to be used or not.
- Igor noted that the XML Resource Properties document has namespace, so wsdm:identity is sufficient. But William brought up the need for extensibility, so ibm:metrics, hp:metrics, etc. can not be easily queried for with XPath.
- ResourceID – need to reformat the text into a set of rules.
- Operations.
  - Will need to mention that it inherits the basic WS-Resource Properties operations.
- Events.
  - None until we tackle Notifications.
- 3:00 State
  - CurrentResourceState.
  - TimeStamp it entered the State.
  - KISS.
    - 3 Top Level States: Available, Unavailable, and SemiAvailable.
    - 2 Resource Properties: CurrentResourceState (enumeration of the three), CurrentResourceStateTimeStamp.
    - 2 Operations: Start, Stop.
  - Igor showed
    - The WSDL listing the three state names and the transition names.
    - Property schema document. In XML.
    - Operations: For each one defined, write the Request (SOAP Message), Reply (SOAP Message), text description of what it does.
      - Intention of Operations is to be synchronous for 0.5.
      - Start – simple request – Start. Reply – Start OK. Throw a fault.
      - Stop
      - Will we allow Stop and Start in the Interoperability Scenario?
      - Discussion of composing WS-Security into WSDM, to be addressed post 0.5.
      - Decided to not allow "AllowDelay" or other such things in 0.5.
      - DECIDED. Will not have parameters on Start or Stop for 0.5.
    - We should make sure there is UML as well as XML.
- 7:00 Group Dinner

END OF MEETING.